



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,116	09/18/2003	Scott Sibbett	ITL.0843US (P14804)	8422
21906 7590 03/20/2007 TROP PRUNER & HU, PC 1616 S. VOSS ROAD, SUITE 750 HOUSTON, TX 77057-2631			EXAMINER RODRIGUEZ, JOSEPH C	
			ART UNIT 3653	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/666,116

Applicant(s)

SIBBETT ET AL.

Examiner

Joseph C. Rodriguez

Art Unit

3653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-23 and 26-39 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 21-23 and 26-39 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21-23 and 26-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Soane et al. ("Soane")(US 5,750,015).

Regarding claims 21-23, 26, 27, 30-33, 36-38, Soane (Fig. 2) teaches a method comprising

applying an electric field gradient to a solution containing charged particles under conditions that will cause at least some of the charged particles to focus along the length of a first channel (22) formed in a device (col. 9, ln. 38-col. 10, ln. 12 teaching focusing of particles near at site 30 near second channels 24, 26, 28 using convective force; col. 4, ln. 24-31) and

without transfer, applying an electric field to the focused charged particles to cause the focused charged particles to migrate through a sieve disposed in at least one second channel in said device, said at least one second channel situated proximate an area where at least some of said charged particles have focused, and said at least one second channel transverse to said first channel and in communication therewith (Id. teaching reaction and focusing of mixture along first channel 22 and then separation into second channels 24, 26, 28 via electric fields). Here, the use of a first and second

Art Unit: 3653

electric field gradients manipulating positive or negative charged particles in specific directions is implicit from the teaching of fine control of the mixture along the various separation channels and the teaching that the electrodes are "capable of generating fields in a variety of different ways in or order to move the cells or viruses through the field based on size, charge, or shape" (col. 9, ln. 3-col. 10, ln. 11). That is, Soane teaches the separation of materials of positive or negative electrical charges and simply adapting the electric field to that the specific charge type to move said materials. Further, Soane expressly teaches that the fields may be activated *simultaneously* (Abstract; col. 2, ln. 48-col. 3, ln. 63).

Regarding claims 28, 29, Soane teaches controlling the mixture separation in the various channels by electrical connections contacting the movement area in the form of intelligent integrated circuitry which is interactive with a computer system that activates the various electric fields, thus a step of detecting said charged particles in said at least one second channel via a change in conductivity is implicit (Abstract; col. 3, ln. 15-26).

Regarding claims 34, 35, 39, Soane teaches the use of ports with reservoirs at the ends of the respective flow channels that apply a convective force using pumps (col. 9, ln. 11 et seq.). Here, as the reservoirs are underneath the ports, the convective force of gravity is inherent.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21-23 and 26-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soane.

Soane as set forth above teaches all that is claimed. However, under an alternative interpretation, Soane may not be regarded as expressly teaching the simultaneous application of electric field gradients and the positive and negative particles positioned as claimed. Here, it is simply unclear whether Soane applies the simultaneous field in the embodiment of figure 2. Soane, however, teaches sophisticated electrode control that provides for the migration of the particle mixture using simultaneously applied electric fields throughout his specification (Abstract; col. 2, ln. 48-col. 3, ln. 63; col. 4, ln. 24-31; col. 9, ln. 38-col. 10, ln. 12 teaching "networks are in connection with a plurality of electrodes capable of generating fields in a variety of different ways in order to move the cells or viruses through the fields based on the size, charge or shape..."). Thus, as Soane teaches separation of the mixture along the central channel and the use of simultaneously applied electric gradients fields to accomplish such, the mere application of simultaneous electric fields to the figure 2 embodiment cannot be regarded as a non-obvious modification. Further, based on the sophisticated electrode control and particle manipulation techniques taught by Soane, it is also regarded as a non-obvious modification to have the negative and positive particles to be positioned as claimed during the normal operation of the device.

Art Unit: 3653

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Soane as taught above.

Conclusion

Any references not explicitly discussed above but made of record are considered relevant to the prosecution of the instant application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Joseph C Rodriguez** whose telephone number is **571-272-6942** (M-F, 9 am – 6 pm, EST). The Supervisory Examiner is Patrick Mackey, **571-272-6916**.

The **Official** fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

The examiner's **UNOFFICIAL Personal fax number** is **571-273-6942**.

Further, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system.

Status information for published applications may be obtained from either Private PMR or Public PAIR. Status information for unpublished applications is available through Private PMR only.

For more information about the PAIR system, see

<http://pair-direct.uspto.gov>

Should you have questions on access to the Private PMR system, contact the Electronic Business Center (EBC) at **866-217-9197** (Toll Free).

Application/Control Number: 10/666,116

Page 6

Art Unit: 3653

Signed by Examiner Joseph Rodriguez

A handwritten signature in black ink, appearing to be 'JR' followed by a stylized flourish.

Jcr

March 16, 2007